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ABSTRACT

The FIPSE-funded Science and Self-Determination Project at the University of Colorado at Boulder (established through the American Indian Educational Opportunity Program) was threefold. The project was: (1) to provide a month-long summer science/math institute on the university campus for 35 Native American Secondary students from a 10-state region; (2) to offer workshops during the academic year to enhance the skills of counselors and/or teachers who work with Native American students at the grassroot level in schools throughout the recruiting region (South Dakota, Wyoming, Montana); and (3) to "track" participating students through the balance of their secondary academic careers to influence entry into collegiate academic careers within one or another discipline of science (a long-term goal). The 1980 report describes each component of the project in reference to planning, selecting students or workshops, experiential learning activities, and results of each component. Appendices include forms, letters, questionnaires, and list of participants for the summer institute; a full text of the student handbook; and a schedule of events for the summer institute. Other appendices are resumes of workshop instructors and the project's evaluation statistical results. (ERB)

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FINAL REPORT

SCIENCE AND SELF-DETERMINATION/FIPSE

1980

American Indian Educational Opportunity Program
University of Colorado
Boulder, Colorado

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FIPSE

SCIENCE AND SELF-DETERMINATION

1980

Overview of the Project

The FIPSE-funded SCIENCE AND SELF-DETERMINATION Project at the University of Colorado at Boulder (established through the American Indian Educational Opportunity Program) is designed to accomplish several things.

The primary purpose of the project is to provide a month-long summer science/math institute on the university campus for thirty-five Native American secondary students (with a focus on grades nine and ten) from a ten-state region.

A summer institute intends to provide for all students a core curriculum in science, math, writing, and reading, which will produce a measurable improvement in students' quantitative/qualitative abilities as measured by appropriate instruments in a pre/post test comparison.

Coupled with the core curriculum offerings are instructional offerings to provide first hand, experiential "hands on" learning experiences for all students at various facilities where advanced scientific endeavor is currently underway. Additionally, direct frequent contact with Native Americans of regional and national prominence in the various scientific fields was carefully built into the month's experience. Well-defined conceptual linkages between contemporary science categories and traditional Native American beliefs were addressed for students at frequent intervals and in sundry ways in the curriculum.

Secondarily, the project is intended through the extension of workshops during the academic year, to enhance the skills of counselors and/or teachers who work with Native American students at the grassroots level in schools throughout the recruiting region.

Finally, as a long-term goal, the project is intended to "track" participating students through the balance of their secondary academic careers and to facilitate in whatever ways possible or appropriate the students' entries into collegiate academic careers within one or another discipline of science.

Ultimately, it is expected that the project will result in a significant percentage of student participants entering professional scientific careers. Also anticipated is an unquantifiable ripple effect throughout at least the regional Native American community relative to science and technical professionalism on the part of tribal members.

The following report/evaluation summarizes the first-year project activities in detail and by category of performance. Narrative is provided only to connect specific data to this overview and to otherwise interpret the statistical results in context. Ultimately, the numbers speak for themselves in articulating the substantial successes of the initial project year.

Pre-Campus Project Activities

Recruitment of student participants began in November 1979. (See Appendix II for a sample brochure and application form.) Regular EOP personnel and college recruiters contacted high schools in ten

states throughout the region. Wide mailings to additional sites were made from January through April 1980. These efforts resulted in eighty-three viable applications to be considered for participation in the summer program.

Student selection took place on the scheduled date, May 15, 1980. A screening committee composed of the Project Director, Norbert S. Hill, Jr., Project Associate Director, Ward Churchill, Project Coordinator, Ann Card, American Indian EOP Head Counselor, Mary Jo Barlow, and an Advisory Board member, Carol Gardipe considered the applications. (See Appendix II for a list of Project Advisory Board Members for the first year.) Criterion for student selection included student cumulative GPA, courses taken in math and science, geographical/tribal distribution, a brief written essay by each student applicant indicating why he/she wished to attend the institute, and at least three written recommendations by appropriate teachers, counselors, administrators, community leaders, etc.

Thirty-five participants and six alternates were chosen from the pool of eighty-three applicants. These individuals represented twenty-one tribes, ranged in age from twelve to seventeen, originated from seven different states (with a potential ten-state impact region), were 57 percent female, 43 percent male, had an average grade-point of 3.2 on a scale of 4, had an expressed interest in science and/or mathematics as career options, and were recommended by their teachers and counselors as students of better than average intellectual and academic potential.

Of the thirty-five original students selected, thirty-three accepted. The two who declined were replaced by alternates. Of the thirty-five who accepted, thirty-four ultimately arrived on campus. The one no-show was replaced by a third alternate. Thirty-three of the thirty-five participants completed all four weeks of the program.

FIPSE participants came from homes that represented various points on a continuum of parental blood quantum, education, and occupational level (see Tables I, II, and III).

TABLE I

Blood Quantum

Mother	Father	
30	27	Enrolled Member
2	7	Non-Enrolled Member
24	24	Full Blood
1	1	3/4 Indian
5	3	1/2 Indian
1	1	1/4 Indian
1	5	Non-Indian

Occupational Level

Mother	Father	
3	7	Professional
8	13	Skilled/Semi-Professional
14	15	Other

Educational Level

Mother	Father	
4	6	Graduate Degree
7	5	College Graduate
2	0	High School Graduate & Some College
16	13	High School Graduate
2	1	Tenth Grade
4	10	Less than Tenth Grade

TABLE II

Parent Student Lives With

Both Parents	21
Mother Only	9
Father Only	3
Alternates Between the Two	1
Neither	1

TABLE III

Tribal Representation*

Navajo	16
Oneida	3
Apache	4
Sioux-Lakota	3
Laguna/Isleta	3
Ute	3
Pima	1
Winnebago	1
Klamath	1
Arapaho	1
Sac-Fox/Winnebago	1
Cherokee	1
Mandan/Hidatsa	1
Cochiti	1
Jemez	1
Chippewa	1
Crow	1
Comanche	1
Shoshone	1

*Some students were affiliated with more than one Tribe, therefore there are more than 35 students represented in Table III.

After students were selected and they had accepted, an organized effort commenced to remain in contact with the students and to have them involved in their preparations for the month on campus. (See Appendix III for copies of NEWSLETTERS, QUESTIONNAIRE, and GENERAL CORRESPONDENCE to participants.)

The questionnaire students were asked to complete was an effort to acquire information from the student about his self-image, learning style, social traits, and other important characteristics to assist in roommate selection, counseling needs, classroom placement, and organized recreational activities to be scheduled.

The letter (see Appendix III for reference) to another member of the group to be written by each member had as a purpose to facilitate social interaction in the early, often awkward stages of adolescent encounters.

In the plans to house students on campus it became apparent that students needed to know prior to arrival the expectation of and needs for dormitory living. A student handbook was generated and provided to students (see Appendix IV).

Because so many students were from out of state and because of the relative difficulty of direct travel to Boulder, travel plans were requested from students. Staff members responded to student arrival by meeting them at planes/buses or with parents, welcomed them to the campus and provided whatever was perceived as necessary so that from July 6 until August 1, 1980, these thirty-five Native American high school students on the University of Colorado/Boulder campus for the first year of the Science and Self-Determination FIPSE Project could succeed.

On-Campus Program Instructional Component

The basic thrusts of the instructional program were

1. to provide students with a broad background in selected areas of physical and biological sciences,
2. to improve mathematical skills and language skills--both reading and writing,
3. to expose students to other academic skills needed by students contemplating college entrance in the near future.

Since students were housed on campus, late afternoon and weekend hours were incorporated into the instructional program. A breakdown of time utilization follows in Table IV.

TABLE IV
Time Utilization

Classroom Instruction	52 hours
Laboratory & Lecture at NOAA	28 hours
Outdoor Laboratory & Lecture at Mountain Research Station	32 hours
Contact with various agencies & individuals in selected tribes and/or guest lectures	48 hours

(See overall schedule of Institute activities; Appendix V.)

Based on Stanford Diagnostic Tests in reading and in mathematics, students were grouped into somewhat homogeneous groups. Instructors (see instructor's resumes; Appendix VI) then attempted to design learning activities geared to the students' current performance levels that would facilitate accomplishment of pre-program goals and objectives.

Because of the brief time students were on campus, and to make time utilization more efficient, individualized learning in skill areas was the basic teaching methodology.

In addition to the classroom instructors, volunteer tutorial assistance was utilized in order to better accommodate the wide range of achievement levels of the students. Most writing and reading assignments were correlated to the basic scientific information being covered in off-campus experiences or to matters particularly related to Indian concerns in science, e.g., energy resources, environmental concerns, etc.

Gains made in skills areas as measured by the A and B forms (used as pre- and post-tests) of the Stanford Diagnostic Tests are shown in Tables V-X.

TABLE V

Stanford Diagnostic Reading Test

Reading Subtest	% of Student Scores Showing Improvement
Decoding	70%
Vocabulary	58%
Comprehension	58%
Reading Rate	52%

TABLE VI

Four Subtests in Reading

# of Students	# of Areas Showing Improvement
6	4
4	3
16	2
6	1
1	0

TABLE VII

Maximum Range of Improvement	Average Gain
Decoding: 32%ile to 95%ile	19%ile points
Vocabulary: 48%ile to 75%ile	13%ile points
Comprehension: 27%ile to 55%ile	15%ile points
Reading Rate: 39%ile to 95%ile	27%ile points

TABLE VIII

Stanford Diagnostic Math Tests

Mathematics Sub-Tests	% of Students Scores Showing Improvement
Number Systems	80%
Computation	76%
Application	70%

TABLE IX

Number of Students	Number of Areas Showing Improvement
14	3
16	2
3	1

No student registered a negative growth. All students showed growth in one or more sub-tests.

TABLE X

Maximum Range of Improvement		Average Gain
Number systems:	43%ile to 79%ile	15%ile points
Computation:	11%ile to 77%ile	16%ile points
Application:	40%ile to 84%ile	17%ile points
Total Math:	58%ile to 85%ile	12%ile points

From tests results which show such positive growth, one would hope to hear positive evaluative remarks from the students. Such is indeed the case as reflected in students' narrative program evaluations. Both classroom instructors were rated above average in methods used and materials used. However, 25 percent felt time devoted daily to instruction needed to be increased. The eagerness for more chances to learn was reflected in the student remarks, such as: "I have learned so much

that I wish I could have spent eight more hours every day!" "I didn't ever have enough time to finish what I was interested in finding out."*

Experiential Learning

The experiential learning component centered upon utilization of a specially devised, three-week sequence of instructional modules co- dinated through the National Oceanic and Atmospheric Administration (NOAA) Laboratories in Boulder (see Appendix VII: NOAA Instructional Sequence). However, the component was not restricted to this forum. On-site activities were also staged at the National Bureau of Standards facilities in Boulder, the National Center for Atmospheric Research (NCAR) in Boulder, Mountain Bell facilities in Denver, the National Earthquate Center in Golden, the University of Colorado's Institute of Artic and Alpine Research's Mountain Research Station, Camp Paul Hummel near Boulder, and the Museum of Natural History in Denver. Non-science activities were also conducted at the Denver Art Museum and the White Buffalo Council Pow Wow in Denver.

As it turned out, the NOAA sequence gravitated too directly towards a lecture format vis-a-vis more "hands-on" activities. This ultimately impaired, but did not necessarily negate its utility within the experiential component. It did, however, absorb the brunt of all negative student evaluation in this area. Labs that directly involved students were described as being "more interesting," "more conducive to learning,"

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*Remarks are quoted directly from student questionnaires.

and "more related to science." Students clearly preferred formats divorced from requirements of their essentially passive participation. Direct involvement with assorted lab equipment, telescope, laser beams, etc., was greatly preferred.

The program at Camp Paul Hummel was designed to facilitate group cohesion early on in the Institute, as well as to provide the extensive presentation of the principles of Botany within the framework of Native American traditionalism by Dr. Don Ahshapenek of the Haskell Indian Junior College (Lawrence, Kansas), the presentation of Native American "legends" (natural lore) by Michael Taylor of the University of Colorado at Denver, an appearance by Sioux country-western singer Floyd Westerman, and evening of traditional music by the Denver Singers from Denver Native Americans United. The staff conducted an array of group-building activities.

The Mountain Research Station experience was focused more specifically on science content, i.e., primarily, tundra botany and high-altitude geology. The activities included an eight-mile hike above timberline to examine flora, geological formations, and a glacial mass. Effects of thin atmosphere on the human body were also examined first-hand and discussed in some depth.

All in all, the experiential component developed to accompany core curriculum can be perceived as having provided participating students with a broad exposure to the possibilities of an array of scientific fields and preoccupations ranging from optical propagation considerations in wave physics to thermal dynamics as applied with solar energy research to hydrology, botany, biology, and meteorology. Staff members' ability

to dovetail content areas within this format to seemingly recreational activities and group-building activites was pronounced.

Many persons (predominantly Native Americans) engaged in professional scientific careers interacted with students during the summer institute (see Appendix VIII, for list of guest speakers). Guest speakers who addressed students were ranked in a similar manner to experiential learning teachers. Those speakers who talked only were less appreciated than the speakers who managed to "show and tell" and to elicit a dialog between speaker and student. Students did recognize the importance of the contribution of all speakers, however, and frequently commented in their evaluations on the impressions made by speakers. The students were particularly pleased when a speaker was Indian because, as one student commented: "It is nice to know real Indians have made--I get lots of encouragement from seeing someone like her who has made it to her goal."

Field trips off-campus received high ratings from students but less enthusiasm from staff. Students viewed these trips as ways to see science put in practice. Staff viewed them, in many cases, as interruptions without appropriate ties to the goals and objectives of the overall program. Field trips that had cultural information and implications seemed to be the trips most favored by students. The Art Museum, Museum of Natural History and the White Buffalo Council Pow-Wow were by far the most popular excursions, although the Earthquake Research Center and the trip to the Mountain Bell Training Center were viewed as valuable because they "represented scientific technology in action," and "gave information about jobs that might be available to anyone interested."

The two extended trips to the mountains--the weekend at Camp Paul Hummel and the four days at the Mountain Research Stations--were two experiences highly prized by the students.

The experience at Camp Paul Hummel with Dr. Ahshapanek made lasting impressions on students and staff. Dr. Ahshapanek spent three days with the student group in a mountain location teaching them the basic principles of plant identification and herbal use. Additionally, he gave support and encouragement and acted as a role model to students who might be having concerns about the acceptability of being Native American and pursuing a science-oriented career.

The Mountain Research Station experience was "physically demanding," "very exciting in what we learned," and "the best kind of experience for us." The academic curriculum was evaluated by staff and students as exemplary of what was wanted for FIPSE, i.e., specifically written for this group and taught in a most meaningful, experiential manner. The related activities were viewed as "appropriate, related and completely compatible with the goals of the total experience." The students expressed repeatedly in their evaluations the notion that they appreciated the physical demands made on them because when they accomplished the tasks, the rewards were that much greater. (See Appendix IX Statistical Summaries, for in-depth analysis on an activity-by-activity basis.)

Other significant activities integrated into the Experiential Learning Module include the use of the film "The Long Walk of Fred Young" and the intereaction with the group by Eddie Box, traditional Ute Indian Spiritual leader. The film, although painfully graphic in its accounts

of Fred Young's personal struggles, served as a sober reminder of the risks taken by the Native American who enters the non-Indian culture for whatever reason. Eddie Box, on the other hand, served to inspire students to consider their striving for education and professional training as the appropriate activities for the "twentieth century warrior."

Counseling

One of the concerns held by staff members from the inception of this project has been the critical need for a strong counseling component that would

1. assist students in their efforts to deal with their Indian identity,
2. provide support in handling general adolescent concerns,
3. provide career counseling,
4. teach survival skills to be utilized in a follow-up that would help deal with re-entry into a fairly flat intellectual environment after a month in a super-charged, highly stimulating environment.

This counseling component became a three-pronged delivery service:

1. Career counseling
2. Cross-cultural concerns
3. Intervention in personal or group concerns.

Career Counseling

This service was provided by personnel from the University Career Counseling Center and included information dissemination as well as the

use of some interest and preference instruments and the COSIS computer terminals. Efforts were made to make available all the information a student might need to make a conscious, informed choice in order to avoid "career accidents." Students' reactions to the career education component were mixed. They approved of being given the information, and saw as valuable the time used to find out unknown facts. However, they were cricital about the amount of time spent performing these tasks. Those students who had made career choices would have preferred to do a "one-on-one" question and answer investigation. Those students who were undecided about viable career options would have preferred more time to independently investigate various career fields. Staff members affirmed student findings.

Cross-Cultural Concerns Counseling

The counseling component dealing with retaining Indian identity and cultural values in a non-Indian environment was viewed by students as highly successful. This component was delivered by the frequent use of Indian professionals as speakers, role models, and interactors with students, as well as the scheduled visits to places that addressed Indian contributions to culture and to career areas reflecting the need for contemporary Indian involvement, and the use of appropriate films. All of these experiences were rated as very valuable in the students' perceptions. They evaluated speakers in terms of information given as well as whether each should be invited to interact again with the group. Without exception Indian speakers rated higher than non-Indians. This seemed to be for reasons of identity and for speaker's ability to understand possible conflicts being experienced by Indian students.

Intervention in Personal Counseling and/or Group Concerns

Personal counseling was accomplished by various personnel in the program. Students as a whole viewed the personal counseling as adequate. However, staff members who had to deal with crisis-oriented problems all agreed that someone outside the regular staff should be available for personal counseling. Staff members felt some typical adolescent issues were never addressed because of the lack of such a person. Also the staff agreed that it was too demanding to have to be "all things at all times" to students who were experiencing very normal developmental adjustments to group living and being away from home--often for the first time.

From the weekend at Camp Paul Hummel stemmed group strengths recognized by the students as the foundations for trust and friendship. Many students also found the experiences there to be uniquely challenging to their tolerance and ecumenical spirit. As one student wrote, "It was the first time I became aware of the differences yet the similarities shared by all Indian peoples." Another said, "I found it interesting to hear myself saying that other people's traditions and beliefs were as valuable as my own. Yet I really did (and still do) mean that."

Another group member felt the group cohesiveness attained at Camp Paul Hummel was the "basis of friendships that would undoubtedly last for many years and help sustain the individuals through many kinds of crisis in times ahead."

Because of counseling experiences (both individual and group):

1. All students progressed in social skills. They became able to form close, trusting cooperative bonds with peers. Supportive

relationships were established that may well serve to sustain certain individuals for many years to come.

2. All students became more aware of their identity as Native Americans. They confronted the problem of maintaining cultural identity in the scientific world and received guidance from other Indians who have succeeded in this area.

3. Students from specific traditions learned from and shared with students from different tribal traditions.

General Information

In addition to the areas already addressed in this evaluation, other more general types of growth were observed, recorded, and addressed by staff and students. These areas included the following:

1. All students grew in their awareness of scientific careers as viable career options.

2. All students developed some degree of competence in survival skills needed to deal with a large University community. They confronted successfully the contingencies of dormitory living, learned to locate goods and services, and to ask for and receive information and assistance.

3. All students learned to deal more effectively with large amounts of information and to make this information manageable through various organizational devices and skills.

4. All students were made aware of their capabilities to rise to expectation for a high level of accomplishment in various areas. Motivation to succeed and a self-image of a person who would succeed became an effective modus operandi for members of the group.

On the last day of the FIPSE encounter, Norbert Hill, Director of the American Indian Educational Opportunity Program as well as of the FIPSE project, addressed the students and capsulized the spirit and assuredly the feelings of the staff and students when he said:

> You have spent these weeks together questioning, listening, talking, and learning--not only matters of science and mathematics, though these have been basic to your quest.
>
> You have sought to resolve who you are and what your place is in the scheme of your tribal history. You have considered your obligations and responsibilities as well as your privilege of membership. You have learned to trust one another, to work hard, to be on time, and to never give up. The staff acknowledges we have pushed you hard, tested your spirit, and tried your patience. To all of our challenges you have responded with growth. Each one of you have overcome. You have emerged from this month wearing the mantle of success. All of you are now and will continue to be, winners. That you continue in this tradition is what we ask and what we expect from each of you. You have begun, now your must never stop.

Recommendations

While the overall evaluation of staff and students was positive, acknowledgement of areas needing improvement were listed as follows:

1. More detail on the application form is needed in order to assist in student selection.

2. Participation should be limited to ninth and tenth graders to reduce disparity of student development in all areas.

3. Testing for placement needs to be carried out prior to student arrival on campus.

4. Instructional program needs to be a priority item and equal time needs to be scheculed daily for it.

5. Individual research projects need to be pursued with students so the more capable student develops the skills needed in that type of task.

6. A computer terminal needs to be made available at all times for student use.

7. A well-equipped laboratory needs to be made available to students.

8. More uniformity of experiences with greater "hands-on" involvement needs to be provided by NOAA.

9. Career counseling experience needs to be condensed and intensified.

10. Personal counseling responsibilities need to be assigned to personnel outside the core staff. Preferably an Indian counselor should be made available.

The first Science and Self-Determination project has been highly successful if viewed in light of the growth in the following areas:

1. Academic Achievement
2. Social Development
3. Cultural Retention
4. Indian Identity

The problems that were identified by staff and participants can be addressed in planning the second year of the program so an even more productive project can be anticipated.

Field Workshop Extension to Appropriate Counselors/Teachers

As stipulated by project design, the 1979-80 project endeavored to extend in-service developmental workshops to the counselors/teachers of Native American students within the primary impact region.

As early as October 1979, a questionnaire was mailed to some 409 known appropriate personnel within the region. The purpose of this questionnaire was the conduct of a preliminary needs assessment to determine initial workshop location, configuration, and content. The project received 53 responses to this mailing, a return of only 13 percent. However, from this somewhat disappointing basis, it was determined that the first workshop offering should be made available to personnel from the High Plains area insofar as 31 of the responses received, 58 percent, came from South Dakota locations; 2 responses, 4 percent, were from Wyoming; and 2 more, an additional 4 percent, came from Montana. This reflects 64 percent of total returns.

Of these, 29 (or 83 percent) requested training or instruction concerning rationales for Native American science participation; 22 (or 63 percent) requested training or instruction concerning student motivational techniques; and 18 (or 51 percent) requested training or instruction concerning stress management techniques. It was therefore determined to offer workshops in each of these three subject areas as well as a fourth workshop covering the project configuration itself.

It was further decided to offer the four workshops on February 29 and March 1, 1980; on consecutive days with two workshops occurring each day. The selection of dates assumed the nature it did because

it was discovered that the workshop could be offered in conjunction with the Third Annual Native American Youth Career Conference at the Auraria Campus in Denver, an event which would bring all involved personnel together at a single time/location, and which would make workshop offerings available to a large group of non-requesting district personnel as well.

Presentation configuration for the sequence was designed to incorporate a combination of both project and consultant personnel. Assignments follow:

1. Project Overview: To be presented by Ms. Martha Romero, Project Administrative office, and Norbert S. Hill, Jr., Project Director.

2. Native Americans in Science Rationale: To be presented by Ward Churchill, Project Associate Director, and with a guest appearance by Ms. Patricia Locke, Director of the National Tribal Chairman's Association.

3. Motivational Strategies: To be presented by Dr. Rick La Pointe, a noted practitioner/lecturer on Native American Educational Psychology, an Oglala Lakota and resident of South Dakota.

4. Stress Management: To be presented by Dr. Dick Hoerl, a noted innovator in this field and resident of the Denver area. Dr. Hoerl is a non-Indian.

As things turned out, inclement weather prevented both Dr. La Pointe and Patricia Locke from making their scheduled appearances. However, the Project Overview presentation was attended by a total of 67 participants, all of whom assessed the workshop as "exceptionally informative and worthwhile" and who requested additional hand-out information be

made available at future presentations. A total of 64 counselors/teachers participated in the Native Americans in Science Rationale presentation. Fifty-three of these, 79 percent, indicated a similar degree of satisfaction with this workshop as was indicated for the first; 9, or 13 percent, indicated that the presentation "could have been better" or "was somewhat confusing"; and 5, or 7 percent, indicated the workshop was "very confusing." 47 participants (70 percent) (including all the lower assessments) indicated a need for additional graphic and hand-out materials to assist in clarifying the presentation. The latter, in particular was, desired to assist in participant presentations in their home schools.

The Stress Management presentation was, again, unanimously well received, this time by 71 participants (a number bordering on overload). Sixty-nine participants, 97 percent, considered the hand-out materials "excellent." Fifty-three participants, 75 percent, felt the workshop might have even been made longer and gone into even greater depth. No participant indicated dissatisfaction with the presentation.

In lieu of Dr. La Pointe's presentation, a final sixty-minute question and answer period was conducted by Martha Romero. It was attended by 49 individuals, all of whom had participated in one or more prior workshops. Of these, everyone indicated that the overall workshop presentation package had been helpful and informative. Thirty-two (65 percent) indicated regret at the inability of Dr. La Pointe to make his presentation. All indicated that they would like to see more such sequences in the future. Twenty-six (53 percent) offered suggestions, by category, of types of workshops they would desire in future workshops. These were:

Category	Number of Responses
1. Motivation Techniques	44
2. Stress Management Continuation	31
3. Math Counseling	25
4. Career Counseling	18
5. Science Major Seminar	9
6. Tribal Resource Distribution	3
7. Corporate Needs in the 1980s	1
8. Agriculture and Irrigation	1

Despite the somewhat disadvantageous conditions under which the initial workshops were conducted (primarily due to blizzard conditions), the package may be generally assessed as having been successful and well-received. Of additional importance, much was learned--both pro and con concerning workshops structuring, content desirability, and future needs.

The second battery of workshops was intended to focus on personnel in the Southwest region. There being no information to the contrary, it was decided to retain the workshop battery presented in Denver as nearly as possible. It was also decided that, due to the success experienced in attracting a range of appropriate parties to the Denver session, to stage the the Southwest battery in conjunction with another regional event in that area.

For the latter reason, the workshops were scheduled to occur at the Southwest Indian Polytechnic Institute (SIPI) in Albuquerque on April 26th, the day of a regional career conference being held at that location. This promised to yield a somewhat smaller, but equally

appropriate turn-out as compared to the national conference in Denver. Again, a mixture of project and consultant personnel were disignated as presenters:

1. Project Overview: Presentation by Martha Romero.

2. Native Americans in Science Rationale: Presentation by Ward Churchill.

3. Motivational Techniques/Understanding Stereotyping Impacts on Native American Students: Presentation by Joann Sebastian Morris, Administrative Director of the California Commission on Indian Education and an experience speaker in this connection.

4. Stress Management: Presentation by Norbert S. Hill, Jr.

In the event, this sequence was executed in different fashion from that in Denver in several important ways. First, all presenters were present as planned. Second, the one day, essentially non-stop scheduling, allowed for a single more or less self-contained group of partipants. Third, more hand-outs and visual aids were employed. Fourth, SIPI itself videotaped the entire series of presentations for replication and (by request) dissemination utilization in the geographic region.

The total number of participants present was 23 of whom 19 (82.6 percent) remained for the entire sequence. The four who left specified they did so because of other obligations elsewhere. Of the 19 who completed the sequence, 100 percent indicated complete satisfaction with the Project Overview presentation; 18 (94.7 percent) indicated both satisfaction and excitement with the Native Americans and Science Rationale presentation; 100 percent indicated complete satisfaction with the Motivational Techniques presentation, with special praise accruing to

the material on stereotyping impacts; 17 (89.4 percent) indicated complete satisfaction with the Stress Management presentation, with 2 (10.6 percent) indicating that the presentation was "very good," but still needed "more depth."

There were no requests for additional visual accompaniment to enhance future presentations. Only 5 (26.3 percent) of the participants felt more hand-out materials would be useful and 4 (80 percent) of these concerned supplemental bibliographic materials relative to the Native Americans in Science Rationale presentation. Seventeen (89.4 percent) indicated that they considered that the sequence "could not have been better"; 2 (10.6 percent) indicated that it could have, but with the qualification that the workshops were still "very beneficial."

All participants agreed that it would be desirable to continue to develop and offer this sort of in-service instruction in the future. Suggestions for future focus included:

Category	Number of Requests
1. Tribal Resource	16
2. Water Rights	9
3. Agricultural Development	9
4. Career Counseling	9
5. Science and Indian Sovereignty	1

On balance, it is assessed that the first year workshop extension batteries were a marked, if tentative, success. Not only was overall response extremely good, indicating both through numbers of participants and resultant commentary, that considerable useful information was conveyed, but much was learned in terms of what and how to present for the second cycle.

APPENDIX I

APPLICATION AND BROCHURE

A NOTE TO TEACHERS AND COUNSELORS

Another aspect of the AI-EOP/FIPSE science project is a plan to work with the high school counselors/teachers who spend the most academic time with the Native American students involved. Project personnel will launch two pilot workshops, one on the Boulder Campus and one in the Southwest, during which various orientational/motivational strategies will be discussed and elaborated.

It is the desire of the project to be of the most direct possible assistance to the counselors/teachers in the field. With this in mind, it would be most helpful if these professionals would complete the accompanying questionnaire concerning needs in their district. In this way we can begin to plan actual workshop content. We feel that by working together, we can all best serve the needs of our students and the Native American community as a whole. Thank you for your assistance.

ILLUSTRATIONS BY TOM ROUBIDEAUX

PRODUCTION DONATED BY SIX DIRECTIONS ENTERPRISES

NATIVE AMERICANS IN SCIENCE

AMERICAN INDIAN-EOP/FIPSE
UNIVERSITY OF COLORADO
AT BOULDER
SUMMER, 1980

UNIVERSITY OF COLORADO, BOULDER

SUMMER SCIENCE INSTITUTE
Student Application

American Indian Educational Opportunity Program

Name _____ Date _____

Address _____ Phone _____

_____ Age _____

_____ Sex _____

Tribe/Agency _____

High School _____

Address _____

Your Grade (circle one) 9 10 11 12

List your science/math courses: _____

_____

_____

Your GPA _____ _____

Write a brief essay explaining why you wish to attend the Summer Science Institute (use space below and on back).

Don't forget to attach three letters of recommendation from teachers/ counselors and a copy of your high school transcript.

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

APPENDIX II

ADVISORY BOARD LIST

APPENDIX III

NEWSLETTERS, TRAVEL PLANS, QUESTIONNAIRE, CHECK LIST

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

May 27, 1980

Dear

Congratulations on your appointment to participate in the FIPSE Summer Science/Math Institute. I hope you are looking forward to coming to Boulder as much as we are looking forward to having you in the program.

Enclosed with this letter is a copy of the Student Handbook that tells you all sorts of things I think you need to know about the Summer Institute. Please read it carefully. Near the back of the book is a list of things you must do. Please complete the first two items--that is, send back your Informed Consent form and the In Loco Parentis form. I have enclosed an envelope for you to use.

Each week between now and July 6 you will either receive something from me or need to send something back to me. I am enclosing a check list with dates these things are due in my office. Please keep your check list handy so you know what needs to be done and get them to me on time.

If you have questions or concerns, please let me know so we can help you take care of any problems.

Again, CONGRATULATIONS! I'll be expecting to hear from you by June 6 with the first two forms telling us you're coming to Boulder.

Enjoy your summer!

Sincerely,

Ann Card

encl.
jms

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

May 27, 1980

Dear

Congratulations! You are one of the alternates for participation in the FIPSE Summer Science/Math Institute. This means if one of the regularly chosen students cannot come, you will be notified that you may come in that student's place. You may be notified anytime between now and July 6.

Because I need to know if you are interested in being an alternate, please sign for the form below and return it to me. If you tell me you do not want to be an alternate, someone else will be chosen in your place.

Thank you for applying for the Institute and please return the form immediately.

Sincerely,

Ann Card
FIPSE Project

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

FIPSE STUDENT QUESTIONNAIRE: DATE _____

NAME _____
LAST FIRST MIDDLE NICKNAME

HOME ADDRESS _____

_____

TELEPHONE _____ GRADE COMPLETED SPRING 1980 _____

HIGH SCHOOL ATTENDED _____

HIGH SCHOOL ADDRESS _____

HIGH SCHOOL TELEPHONE _____

NAME OF PARENT/GUARDIAN _____

ADDRESS _____ TELEPHONE _____

BROTHERS' NAMES	AGE	SISTERS' NAMES	AGE

MY OVERALL FEELING ABOUT SCHOOL: 1 DISLIKE ← 2 3 4 → 5 LIKE

IN SCHOOL, BEST LIKED SUBJECTS _____

_____

LEAST LIKED SUBJECTS _____

_____

EASIEST SUBJECTS _____

_____

HARDEST SUBJECTS _____

_____

DO YOU TAKE ANY MEDICATION REGULARLY? _____ YES _____ NO

IF SO, WHAT? _____

_____

WHAT CONDITION IS MEDICATION FOR:

_____

_____

NAME & ADDRESS OF DOCTOR WHO PRESCRIBES MEDICATION:

_____
NAME

_____
ADDRESS

_____
PHONE

MY RELIGIOUS PREFERENCE IS: _____

I WOULD _____ / WOULD NOT _____ LIKE THE TIMES AND LOCATIONS OF THE CHURCH IN BOULD

ABOUT MYSELF

1. MY AMBITION IS TO _____

_____

2. A SECRET WISH I HAVE IS _____

_____

3. I GET REALLY ANGRY WHEN _____

_____

4. I AM MOST SCARED WHEN _____

_____

5. I AM HAPPIEST WHEN _____

_____

6. I FEEL BEST ABOUT MYSELF WHEN _____

_____

7. WHAT I WANT MORE THAN ANYTHING ELSE IS _____

_____

8. I THINK I WOULD NOT BE ABLE TO EXIST IF _____

_____

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program
SUMMER SCIENCE/MATH INSTITUTE

NEWSLETTER I

June 18, 1980

A number of changes have taken place since you received your handbook. In the front of the book there are names of people who will be working with the FIPSE program. You might want to mark the changes. Kay Culbertson, residence advisor, and Matilde Recalde will not be working in the program. To date, they have not been replaced.

* * *

On the questionnaire (by the way it has been fun reading the questionnaires and autobiographies--I feel I'm beginning to know you already!) I forgot to ask each of you to give me your birthday. Many of you gave me that information, however I need it on everyone, so please complete the letter blank at the end of the newsletter and send it back with your travel plans. By now I hope all of you have made travel plans and will get them to me by June 20. Remember if you are coming by plane or bus we will meet you in Denver and bring you to Boulder.

* * *

For those of you have trouble with finannces in finding money for travel, you might like to know in some cases tribal offices have helped buy tickets and helped with other expenses.

* * *

On your calendar you can add a POW WOW to the evening of July 19th. The 16th Annual White Buffalo Council's Pow Wow will be held near Denver and we are planning to have you attend. If any of you want to bring your dance outfits, feel free to do so.

* * *

Would any of you be interested in attending a Shakespearean play? We have some tickets for Hamlet and some for Love's Labor's Lost. One of the instructors will be helping you learn the plot of both plays so you have an idea of what the story is about and what is taking place.

The Shakespearean theater that is on campus is famous for their productions. So if you think you'd like to see either of the plays, sign up on the same sheet as your birthday.

* * *

FORM I - INFORMED CONSENT

I, _____ have read the handbook and have decided I do want to participate in the FIPSE Summer Science/Math Institute. My parents (guardian) have also given their permission for mey to attend.

Please consider me a participant.

_____ _____
Date Sign here

I agree to let my son/daughter participate in the FIPSE Project.

_____ _____
Date Parent's Signature

FORM II - IN LOCO PARENTIS

Permission is herby given for adult members of the FIPSE Summer Science/Math Institute to act as my representative in signing for any medical services needed by my son/daughter _____.
Student's Name

I understand all due efforts will be made to insure safety and good health of the members of the Institute. Should an accident occur, I will in no way hold the Institute responsible.

_____ _____
Date Parent's Signature

Please give the name and phone number of a relative or friend who we can call if there is an emergency and we cannot get in touch with you.

_____ _____
Name of Friend or Relative Phone Number

CHECK LIST

☐ You must send Informed Consent and In Loco Parentis form by JUNE 6.

By June 2, I will have mailed a questionnaire and requested an autobiography from you.

☐ You must return your completed questionnaire and autobiography by JUNE 16.

By June 15, I will have mailed a Newsletter to you telling you more details of the summer's activities and requesting you write a letter to a specific member of the group and send me your travel plans.

☐ You must mail TRAVEL PLANS form and write a letter to a member of the group by JUNE 20.

By June 25, I will have mailed the last Newsletter to you with all the lastest information.

☐ You must be in Boulder on Campus on July 6 by 5 pm. If you're planning to come by car, plan to arrive between 12 and 5 pm. If you're flying or busing to Denver, we will plan to meet you in Denver.

For evaluation purposes we need the following information about each of you.

Your Name _____

Your Home Mailing Address

_____

_____

Your Father's Name _____ Living__ Dead__

Occupation _____

Education Level _____

Tribe _____ Blood Quantum _____

Enrolled? ___ yes ___ no Where? _____

Your Mother's Name _____ Living__ Dead__

Occupation _____

Education Level _____

Tribe _____ Blood Quantum _____

Enrolled? ___ yes ___ no Where? _____

Do you live with Mother & Father _____ Only Father _____

Only Mother _____ Neither _____

To whom and to what address may we send a letter inviting your family to a final dinner as well as a progress report on the work for the FIPSE?

Name _____

Address _____

_____

City State ZIP

APPENDIX IV

STUDENT HANDBOOK

IMPORTANT PEOPLE AT THE UNIVERSITY

American Indian Educational Opportunity Program

Norbert S. Hill, Jr. - Director
Ward Churchill - Associate Director
Mary Jo Barlow - Counselor
Roseanna Sneed - Counselor
Janet Shotwell - Secretary

FIPSE Project

Ann Card - Coordinator
Ken Wilson - Math-Science Instructor
Bernie Legner - English-Reading Instructor

Residence Advisors:

Peer Counselors-Tutors

Dennis Manuelito
Susan Calabaza

Mailing Address:

AI-EOP FIPSE Project
Campus Box 135
University of Colorado
Boulder, CO 80309

Office Telephone: (303) 492-8241

LYNN HANKS
P. O. Box 251
MESCALERO, NM 88340
(505) 671-4698

RONALDO HENDERSON
Box 846
SHIPROCK, NM 87420

KAREN HENRY
P. O. Box 1266
NAVAJO, NM 87328
(505) 777-2231

PRUDENCIA LEGAH
P. O. Box 958
WINDOW ROCK, AZ 86515
(602) 871-4758

VIRGIL LORETTO
P. O. Box 519
WINDOW ROCK, AZ 86515

MARIETTA MARMON
P. O. Box 1383
OLD LAGUNA, NM 87026
(505) 552-9033

PHOEBE MARTINE
P. O. Box 218
RAMAH, NM 87321

SCOTT MEANS
KYLE, SD 57752
(605) 455-2356

ELLEN MILLS
GENERAL DELIVERY
TOWAOC, CO 81334

EDGAR CHEE MONETATHCHI, III
P. O. Box 354
RAMAH, NM 87321

CASSIUS MONTOYA
P. O. Box 387
DULCE, NM 87528

PATRICIA NEZ
P. O. Box 308
TSAILE, AZ 86556
(602) 724-3387

JACKIE OLD COYOTE
1308 S. BOZEMAN
BOZEMAN, MT 59715
(406) 587-1518

CLAIRE ST. CLAIR
Box 405
FORT WASHAKIE, WY 82514
(307) 332-9285

REGINA KAY TSINNIE
P. O. Box 83
TUBA CITY, AZ 86045
(602) 283-4268

CHERYL TSOSIE
Box 491
MANY FARMS, AZ 86538
(602) 781-6393

Name	Sex	Tribe	Grade	State
1. Eunice Anderson	F	Navajo	10	New Mexico
2. Marie Author	F	Oneida	10	Colorado
3. Cynthia Barker	F	Jicarilla Apache	11	Arizona
4. Sherry Begay	F	Navajo	10	New Mexico
5. Charles Belisle	M	Oneida	9	Wisconsin
6. Allen Bergen	M	Navajo/Pima	10	Arizona
7. John Card II	M	Klamath	9	Colorado
8. Roberta Chavez	F	Cochite	10	New Mexico
9. Ida Clarke	F	Oglala	10	South Dakota
10. Larry Cordova	M	Navajo	9	Colorado
11. Anthony Dillon	M	Apache	9	Arizona
12. Michele Dineyazhe	F	Navajo	10	Arizona
13. Michael Dugan	M	Cherokee	9	Colorado
14. Dean Garcia	M	Navajo/Mandan	9	New Mexico
15. Lucinda Garcia	F	Luguna Hopi/Isleta	10	New Mexico
16. Lynn Hanks	M	Mescalero Apache	11	New Mexico
17. Ronaldo Henderson	M	Navajo	10	New Mexico
18. Karen Henry	F.	Navajo	10	New Mexico
19. Prudencia Legah*	F	Navajo	9	Arizona
20. Virgil Loretto*	M	Navajo	9	Arizona
21. Marietta Marmon	F	Laguna Pueblo	10	New Mexico
22. Phoebe Martine	F	Navajo	9	New Mexico
23. Scott Means	M	Oglala/Lakota	9	South Dakota
24. Ellen Mills	F	Ute Mountain	9	Colorado
25. Edgar Monetathchi	M	Navajo/Comanche	10	New Mexico
26. Cassius Montoya	M	Jicarilla Apache	10	New Mexico

Welcome to the FIPSE Summer Science/Math Institute. The month of July 1980 will be a month you will never forget. We hope it will be because of all the new things you learn and new experiences you have. This handbook has been put together to give you information about life on the campus at the University of Colorado. We will discuss the content and answer questions during orientation. So read the handbook and list your questions, because you are responsible to know, understand, and abide by the rules and regulations of the University.

* * *

HOUSING AND MEALS

Students will be living in NICHOLS HALL. Two students will be assigned to each room. You will receive your room assignment and key when you arrive on campus July 6. Meals will be served in the dining room at Nichols Hall. A meal card to admit you to the dining room will be given to you on the evening of your arrival. You must have this meal card to be admitted to the dining room. On several occasions we will be eating meals away from the dining room. You will be told in advance about these occasions.

Here are some other items of general information you will need to know about living on the campus.

1. Keys: Only one key will be issued to each resident when he/she checks into the residence hall.

2. Loss of personal property: Although the University exercises reasonable efforts to protect student property, it assumes no responsibility for the theft, destruction, or loss of money, valuables, or other personal property belonging to, or in the custody of, the student for any cause whatsoever, whether such losses occur in the student's room, storage rooms, public areas, elsewhere in the hall, or in the baggage related to shipment and storage. Some suggestions are offered for the protection of your property. You are urged to: (1) Lock your room when you're out, even for a few minutes, and (2) Report to the hall office any items that are stolen or missing, immediately.

3. Cleaning: Students are responsible for cleaning their own rooms. Equipment will be made available in designated areas in each hall for this purpose. Students are expected to keep their rooms in a reasonable state of cleanliness. When a student vacates a room he/she is expected to remove all items that were brought into the room, including items of decoration and items regarded as trash. He/she is responsible for cleaning the room and its facilities so that it is left in approximately the same condition as when the student moved in.

4. Linen: At check in, each resident will be issued a set of linen consisting of a blanket, mattress pad, pillow case, and two sheets. The resident is thereafter responsible for exchanging sheets and pillow case for clean linen at the time set for linen change. When the resident vacates the building, he/she is responsible for returning the complete set of linen.

5. Laundry facilities: Washing machines and dryers are located in the basement of your resident hall. Washing machines are 35¢ and dryers are 25¢. You will need to provide your own money for doing laundry.

6. Dorm hours: Since the schedule for the Summer Institute is intensive, all students are expected to be in the dorm by 8:00 pm unless there is a function going on elsewhere. Lights will be out at 10:30 pm.

7. Quiet hours: Radios, musical instruments, and television should be played at reasonable times so they won't interfere with the study or sleep of other students. Recreations rooms are recommended for large group activities.

Other rules the University enforces include the following:

1. Firecrackers: Boulder fire prevention ordinances prohibit the manufacture, sale, use, and possession of all fireworks anywhere within the city limits including the University campus.

2. Fire alarm system and equipment: The fire alarm system and fire fighting equipment are for your protection in the residence halls. Tampering with fire fighting equipment or setting off a false alarm not only makes the system ineffectual but also endangers the lives of others in the residence halls.

3. Elevators: Many of the halls are equipped with service and/or passenger elevators. Tampering with or misuse of elevators is a safety hazard and is prohibited.

4. Dormitory roofs and outside walls: Because of the danger involved and the roof damage that can occur, climbing on the roofs of the residence halls is prohibited. Climbing from the windows and scaling or repelling outside walls is prohibited.

5. Windows and screens: Stops on windows and screens are not to be removed. There is a service fee for replacement. Because of the danger involved, throwing anything from windows, climbing from windows, scaling outside walls, and storing items of any kind on window ledges are prohibited.

6. Appliances: In the residence halls, several student rooms are wired into the same circuit. Normally one should not plug more than two appliances into one electrical outlet. Electrical appliances which are acceptable for use in student rooms are: radios, clocks, irons, blow dryers, and curlers.

7. Reasonable care is to exercised in use of dormitory furniture and resident hall furnishings.

TRANSPORTATION

Transportation to and from Boulder is your responsibility. However, the staff is planning to pick up airline, train, and bus passengers in Denver and bring them to Boulder. As soon as you have completed your travel arrangements, please complete the enclosed form and mail it to us so we can let you know when and where the University van will pick you up.

Transportation for Institute activities will be provided. Boulder is an easy city to get around in, either by walking or by taking the bus. Participants should not plan to bring cars. Hitch-hiking will not be permitted.

MAILING ADDRESS

During your stay on the campus you may receive mail by having it address to yourself at:

NAME (yours, of course!)
AI-EOP/FIPSE Project
Nichols Hall, Campus Box 118
University of Colorado
Boulder, CO 80309

TELEPHONE

There are telephones in the dorm available to students for local calls. Any long distance calls must be made through the AI-EOP office, and you must arrange for the long distance call with an adult counselor. These long distance calls will be made in emergency situations only.

Should your family need to reach you, they may do so by using the following number which is the AI-EOP office (303-492-8241). Someone is at the telephone Monday-Friday from 7:30 am to 4:30 pm.

The number at Nichols Hall that may be used is 303-492-6885 Person-to-person long distance calls are the wisest way to call since you may not be readily "available" at all times to be reached by telephone.

RECREATION

The University campus provides a wide variety of recreational opportunities. You will be given a recreation center pass which will allow you to use the swimming pool, tennis courts, weight lifting equipment, handball courts, etc. There will be some scheduled activities (softball games, frisbee contests, and the like) for you as well as speakers, plays, etc., that are always scheduled on campus during the summer. There is a movie theater on campus, as well as a bowling alley, pool hall, and pinball machines, snack bar, etc.

MONEY

If you plan to buy souveniers, play pinball, or do other things that will cost money, you need to bring spending money with you. Five to ten dollars a week for incidentals should be sufficient. You are encouraged to bring money in travelers checks rather than cash. We cannot be responsible for lost or stolen money.

CHURCH SERVICES

There are many churches in Boulder that you may attend if you choose to do so. The questionnaire you will be receiving will have a place for you to indicate your religious preference so that by the time you arrive in Boulder we will have the location and time of services for any denominations indicated. If the church is not within walking distance we will help you find transportation.

CONTRACTS AND EXPECTATIONS

Each student will receive a contract of performance and behavior. The contract will be explained by a counselor. You are expected to sign and abide by the contract if you wish to participate in the program.

The possession, sale, use, and/or distribution of illegal drugs is a violation of Colorado state law. Any student involved in such illegal activities can be arrested by the University police. Furthermore, any student involved in any such illegal activities will be expelled promptly from the program. The same is true of the use and/or sale of alcohol.

The use of cigarettes is strongly discouraged because of your health and safety and for the comfort and health of those around you. The purchase of cigarettes by those under 16 is illegal in Colorado.

THINGS TO BRING

MUST HAVE:

1. Comfortable clothes--jeans, shirts, dresses, skirts--whatever you are used to wearing. Include a light sweater, sweatshirt, or jacket for use in the evening if you are outdoors. We suggest that you have enough changes of clothes to last a week since there will be limited time to do laundry.
2. Warm sweater or jacket for use in the mountains.
3. Raincoat or poncho.
4. Hiking boots or very heavy shoes. Do not bring new hiking boots. Break them in or do not bring them because mountain hiking is not a place for new boots!
5. Warm socks.
6. Laundry detergent.
7. Items for personal hygiene (comb, toothbrush, shampoo, etc.).
8. Towels and washcloth.
9. Pens and penciles.
10. Sewing kit (at least a needle and thread and scissors).
11. Clock with an alarm.

HELPFUL BUT NOT REQUIRED

1. Shorts
2. Swim suit
3. Dark glasses
4. Backpack
5. Radio
6. Camera
7. Guitar or small musical instrument
8. Wristwatch

LEAVE AT HOME

1. Pets and cars
2. Televisions
3. Stereo equipment
4. Expensive jewelry

CLASS AND ACADEMIC ACTIVITIES

Classes will be held in the Business Administration Building, rooms 206-207. No food or drink and no smoking is permitted in the classrooms. On certain days of week some classes will be held in the NOAA laboratories which are located off-campus. On two separate weekends the entire Institute will be at a mountain location--one weekend at Camp Paul Hummel, and the other at the Mountain Research Station. (Now you know why you need heavy shoes or hiking boots.) Several field trips will be taken to various locations in the surrounding area and a number of guests will visit the program to talk with students.

Two teachers will be responsible for classroom instruction which will be tailored to student's general level of achivement and need. The classroom will not be a "sit still and listen" type--rather you will be doing things yourself.

Some career counseling will be done so you have a change to learn about the various careers in science and math and which one (if any) is best for you.

Some "survival skills" will be on the program, too--how to take tests, how to use the University library, how to apply for college, financial aid, scholarships, etc.

A copy of the schedule is enclosed. As you can see, you will be very busy (that's why lights out is at 10:30--we expect you'll be tired!), but we think you will enjoy the things that have been planned.

MEDICAL AND INSURANCE INFORMATION

The FIPSE Project has purchased accident insurance for participants of the Institute. The insurance will be in effect from July 5 until August 3 which will cover your travel time to and from the Institute. There is a $25 deductible clause for each use. Also, the insurance requires that parents sign the "in loco parentis" form providing permission for University staff to obtain medical services for students should an accident or illness occur. This insurance is provided at no cost to you. The FIPSE project is paying for the coverage.

Also on campus there is available medical services for minor illnesses. If a student should become seriously ill or injured, parents will be notified and the student will be sent home as soon as possible. It is necessary, therefore, that parents provide the name of a relative or friend that can be reached by telephone should an emergency arise and should we be unable to reach parents.

THINGS YOU MUST DO

Now that you have been chosen to participate in the FIPSE Project and you have read this handbook you must begin the process of joining the group.

1. Enclosed with this handbook is a form saying you will/will not participate as a member. Please sign this form and return it IMMEDIATELY. We need this so alternates can be notified if you choose not to come. Your parents need to sign it, too.

2. Also enclosed is an "in loco parentis" form for your parent to sign. It is to give permission for the program to authorize medical treatment if you should need it. Return this form along with your acceptance form.

3. Begin to think about how you're going to get to Boulder--you must arrive on July 6 before 5 pm. Once your travel plans are complete, send the travel form to us so we can know when to expect you and plan accordingly.

4. Within the next few days you will receive a questionnaire. Please complete it and return it not later than June 10.

5. If you have questions or if there are problems getting here, please write to see if we can help!

Mrs. Ann Card
FIPSE Project/AI-EOP
Campus Box 135
University of Colorado
Boulder, CO 80309
(303) 492-8241 - 7:30-4:30 M-F

Once again, Welcome! We are looking forward to meeting each of you.

Name _____

My birthday is _____
Month Day Year

_____ Yes, I want to go to the Shakespeare play.

_____ No, I do not want to go to the Shakespeare play.

_____ I'm not sure if I want to go or not.

I wrote a letter to _____ on _____.
Name date

Signed _____ Date _____
Your Name

APPENDIX V

CALENDAR

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Arrive by 5 pm 7/6 Sunday
7 Orientation Tour Campus Contracts LUNCH Testing Picnic	8 Orientation (cont.) 10:00 VIP's LUNCH Testing Location skills Scavanger hunt	9 Test taking skills - 8:00 Career Dev. 9:00 LUNCH Instruction	10 Communication skills Instruction LUNCH Introduction to Science Journaling	11 NARF Celebration LUNCH Leave for Camp Hummel Mtn. Retreat Journaling	12 Dr. Ashapanek Jean Hodges et al. LUNCH as above . . . Journaling Michael Taylor	13 BRUNCH Continue Retreat Journaling Dinner on campus
14 Instruction LUNCH Pre-NOAA Instruction Journaling	15 NOAA LABS 8-12 LUNCH Post-NOAA Instruction Journaling	16 Test taking skills Survival skills Career Ed 9-11 Instruction LUNCH Pre-NOAA Journaling	17 NOAA LABS 8-12 LUNCH Bob Whitman 1:00 Post-NOAA Journaling	18 Field Trips Journaling	19 Field trips Journaling	20 WHEW DAY
21 LUNCH Pre-NOAA Journaling	22 NOAA LABS 8-12 LUNCH Post-NOAA Instruction Journaling	23 Test taking & Survival skills Career Ed. Instruction LUNCH Pre-NOAA Instruction Journaling	24 NOAA LABS 8-12 LUNCH Post-NOAA Instruction Journaling	25 Leave for Mountain Research Station LUNCH	26 MOUNTAIN RESEARCH STATION	27 MOUNTAIN RESEARCH STATION
28 MOUNTAIN RESEARCH STATION Return to campus Pre-NOAA 57	29 NOAA LABS 8-12 LUNCH Post-NOAA Instruction	30 Survival skills Career Ed Instruction LUNCH Pre-NOAA	31 NOAA LABS 8-12 LUNCH Post-NOAA Instruction WRAP UP	AUGUST 1 Post-Testing & Evaluation LUNCH Testing Pack for travel FINAL BANQUET & Awards	2 LEAVE FOR HOME	3

SCHEDULE FOR WEEK OF JULY 6-12, 1980

Sunday

2:00	Check-In
5:00	Dinner
7:00	Movie
10:30	Lights-Out

Monday

7:00	Breakfast
8:00	Orientation
9:00	Eddie Box (speaker)
10:00	Campus Tours & Contracts
12:00	Lunch
1:00	Testing
5:00	Picnic
8:00	Dorm
10:30	Lights-Out

Tuesday

7:00	Breakfast
8:00	Orientation
9:30	VIP Welcome, Events Center
10:00	Chancellor
10:20	Dr. Fletcher, Dr. Hess
12:00	Lunch
1:00	Testing
4:00	Staff Meeting
5:00	Dinner
6:00	Scavenger Hunt
8:00	Dorm
10:30	Lights-Out

Wednesday

7:00	Breakfast
8:00	Instruction
9:00	Career Development
12:00	Lunch
1:00	Instruction
4:00	Staff Meeting
5:00	Dinner
8:00	Dorm
10:30	Lights-Out

Thursday

7:00	Breakfast
8:00	Instruction
12:00	Lunch
1:00	Instruction
4:00	Staff Meeting
5:00	Dinner
8:00	Dorm
9:00	Briefing for Retreat
10:30	Lights-Out

Friday

7:00	Breakfast
8:00	Weekend Preparation
9:00	NARF Celebration
12:00	Lunch
1:00	Leave for Camp Hummel
2:00	Arrive at camp
3:00	Activities Begin
6:00	Supper
6:30	Volleyball
7:30	Activity--P.E.
8:00	Speaker
9:00	Informal Time
10:00	Lights-Out

SCHEDULE FOR WEEK OF JULY 13-19, 1980

Monday

7:00	Breakfast
8:00	Instruction
12:00	Lunch
1:00	Pre-NOAA
4:00	Staff Meeting
5:00	Dinner
8:00	Dorm
10:30	Lights-Out

Tuesday

7:00	Breakfast
8:00	NOAA Labs
12:00	Lunch
1:00	Post-NOAA
3:00	Carol Gardipe, Speaker
4:00	Staff Meeting
5:00	Dinner
8:00	Dorm
10:30	Lights-Out

Wednesday

7:00	Breakfast
8:00	Instruction
9:00	Career Development
12:00	Lunch
1:00	Pre-NOAA
4:00	Staff Meeting
5:00	Dinner
8:00	Jean Hodges, "Nature's Mathematicians"
10:30	Lights-Out

Thursday

7:00	Breakfast
8:00	NOAA Labs
12:00	Lunch
1:00	Speaker
2:00	Post-NOAA
4:00	Staff Meeting
5:00	Dinner
7:00	Briefing for Field Trip
8:00	Dorm
10:30	Lights-Out

Friday

7:00	Breakfast
8:00	Leave for Golden
9:00	Earthquake Lab Research, Colorado School of Mines
11:30	Lunch in Park
12:30	Leave for Mountain Bell
1:00	Mountain Bell Research Labs
5:00	Leave for Boulder
6:00	Navajo Taco Dinner
8:00	Briefing for Field Trip
10:30	Lights-Out

Saturday

7:00	Breakfast
8:00	Leave for Denver
9:00	Museum of Natural History
1:00	Lunch in Park
2:00	Art Museum - Indian Collection
5:30	Dinner - Restaurant
7:00	Pow-Wow
10:30	Leave for Boulder, Lights-Out

SCHEDULE FOR WEEK OF JULY 20-26, 1980

Sunday

WHEW DAY!

5:00	Dinner on Campus
10:30	Lights-Out

Monday

7:00	Breakfast
8:00	Instruction
12:00	Lunch
1:00	Pre-NOAA
4:30	Staff Meeting
5:00	Dinner
8:00	Dorm
10:30	Lights-Out

Tuesday

7:00	Breakfast
8:00	NOAA Labs
12:00	Lunch
1:00	Post-NOAA & Instruction
4:00	Staff Meeting
5:00	Dinner
8:00	Shakespeare Theater
10:30	Lights-Out

Wednesday

7:00	Breakfast
8:00	Instruction
9:00	Career Education
11:00	Instruction
12:00	Lunch
1:00	Instruction
4:00	Staff Meeting
5:00	Dinner
8:00	Shakespeare Theater
10:30	Lights-Out

Thursday

7:00	Breakfast
8:00	NOAA Labs & Field Trip
12:00	Lunch at Erie
1:00	Tower Visit
2:00	Instruction for Mountain Research Station
4:00	Staff Meeting
5:00	Dinner
8:00	Prepare for Mountain Research Station
10:30	Lights-Out

Friday

7:00	Breakfast
8:00	Leave for Mountain Research Station

See SPECIAL SCHEDULE for the rest of day and weekend.

SCHEDULE FOR WEEK OF JULY 28 - AUGUST 2, 1980

Monday

1:00	Return from Mountain Research Station
2:00	Pre-NOAA Instruction
4:00	Staff Meeting
5:00	Dinner
6:00	Clean-Up from Mountain Research Station
8:00	Dorm
10:30	Lights-Out

Tuesday

7:00	Breakfast
8:00	NOAA Labs
12:00	Lunch
1:00	Instruction & Post-NOAA
4:00	Staff Meeting
5:00	Dinner
8:00	Dorm
10:30	Lights-Out

Wednesday

7:00	Breakfast
8:00	Instruction
9:00	Career Education
12:00	Lunch
1:00	Instruction & Pre-NOAA
4:00	Staff Meeting
5:00	Dinner
8:00	Dorm
10:30	Lights-Out

Thursday

7:00	Breakfast
8:00	NOAA Labs
12:00	Lunch
1:00	Instruction & Post-NOAA
3:00	Evaluation
4:00	Staff Meeting
5:00	Dinner

Friday

7:00	Breakfast
8:00	Testing
12:00	Lunch
1:00	Final Evaluation & Wrap Up
3:00	Pack for Home
5:00	Dinner
6:00	Special Event, Charlie Hill Awards, Finale

Saturday

7:00	Breakfast
	Leave for Home

MRS

STARTING	FIRDAY	SATURDAY	SUNDAY	MONDAY
06:00		Mammal trapping		
07:00	Breakfast	Breakfast	Breakfast	Breakfast
08:00			Tundra Trip	Glacier Walk
09:00		Mammalogy	↓	↓
10:00	Introduction	↓		
11:00	Lab tour	Climatology		
12:00	Lunch Dining Hall	Lunch Dining Hall	Lunch - sack	Lunch - sack
13:00	Hike to C - 1	Practical Survival		
14:00	↓	Subalpine hike		
15:00		↓		
16:00				
17:00				
18:00				
19:00	Mammal Trapping	Man and the Environment Lecture	Winter Ecology Lecture	
20:00				
21:00	Campfire and drums			

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APPENDIX VI

INSTRUCTORS RESUMES

RESUME

Personal

Name : Bernie Legner

Address : 351 Cedar Hills Dr. H-58
Gallup, NM 87301

Birthplace : Odell, IL 60460 Height : 5'9"

Birthdate : February 25, 1945 Weight : 175 lbs.

Work Experience

August 1978 to present — Gallup McKinley County Schools
Gallup, NM 87301

Classroom Instructor for seventh grade language arts. Provides instruction in which communication is primary focus; cognitive/organizational skills and language skills are secondary focus; threaded throughout classroom environment is concept of people as social beings learning to co-exist more comfortably.
(September 1979 - present)

Classroom Instructor for one class of mixed seventh and eighth grade ESL (English as a second language) students, all of which are non-speakers of English.
(September 1979 - present)

Classroom Instructor for seventh grade reading. Diagnosis, assessment and instruction for individuals and small groups.
(September 1978 - June 1979)

Classroom Instructor for Real Life Reading, an eighth grade course. Students filled out application forms, learned banking procedures, map reading, basic survival vocabulary and reading skills. Prepared a detailed course curriculum.

August 1978 to present — Adult Basic Education
Adult Learning Center
University of New Mexico
Gallup, NM 87301

Resume (cont'd)

Instructor in ABE program for GED and college prep programs. Diagnose and assess student strengths and weaknesses, plan individualized learning programs. Some academic counseling. Prepare developmental learning programs for a small number of adults wanting to enter the branch college.

August 1975 to May 1978 — Ramah Navajo School Board, Inc.
Ramah, NM 87321

Co-writer with Ken Wilson of a detailed, comprehensive language arts/social studies Core curriculum for grade 7,8,9 Navajos at Pine Hill. The curriculum was prepared as a guide for future team teaching members. Educational assumptions and philosophy, course content, materials, methods, sample lesson plans, skill & concept taxonomies and sample goals and objectives were major sections.
(Spring of 1978)

Classroom Instructor for grades 7,8,9. Member of a teaching team that integrated a skills/process approach to social studies and language arts. Planned language units in which activities develop skills and concepts. Cognitive/organizational skills, developmental reading and writing, study skills, and discussion skills were program priorities.
(September 1977 - May 1978)

Participated in curriculum workshop at Pine Hill High. Developed a K-12 language arts skill taxonomy.
(August 1977)

Prepared an ESL language arts curriculum for Pine Hill Navajo. Curriculum contained: 1) rationale, 2) seven-level skill taxonomy (listening, speaking, reading, writing and study skills), 3) goals, and 4) objectives.
(June-July 1977)

Classroom Instructor for grades 7,8,9. Member of a teaching team integrating a skills/process approach to teaching social studies/language arts. Team members designed and developed: a 7th grade geography course developing student skills/concepts with emphasis on reading, writing and study skills; an 8th grade course in Native American History and Navajo Government; a 9th grade course in the study of factors making up culture and a study of contemporary American life.
(August 1976 to June 1977)

Resume (cont'd)

Worked with Ken Wilson writing a rough draft of a skills based, integrated social studies/language arts curriculum for grades 7,8,9 Navajo ESL students. The curriculum contained: 1) rationale, 2) definition of skills by grade level, 3) and semester and/or year objectives by grade.
(July 1976)

Classroom Instructor for grades 7,8,9. Worked with a teaching team in integrating social studies/language arts instruction. Experimented with different educational methods and strategies for teaching ESL Navajo students. Developed team teaching behaviors and procedures.
(August 1975 to June 1976)

August 1971 to June 1975 — Marshall Islands High School
Majuro, Marshall Islands 96960

Reading Project Coordinator for USEA Title I 2nd language reading program for all 9th graders; responsible for establishing a testing program, writing 2nd language reading curriculum and developing reading materials; directed the development of English portion of High School Entrance Test; requisitioned materials and supplies; wrote program proposal and worked in cooperation with reading teachers; submitted final program report to USEA Title I State Agency.
(September 1972 to June 1975)

Classroom Instructor for 9th, 11th and 12th grade ESL classes; performed normal classroom responsibilities; 11th grade advisor; chairman of American Field Service AFS selection committee.
(July 1971 to June 1972)

September 1967 to July 1969 — Peace Corps
Washington, DC

Agriculture Agent involved in coconut rehabilitation; responsible for organizing and implimenting rehab program; ordering agriculture supplies; teaching principles and by-laws of cooperative.

Education

December 1976 — Attended teacher training courses at Pine Hill
Completed all requirements for New Mexico Teacher Certification.

Resume (cont'd)

June 1970 to June 1971	Attended University of Hawaii, Honolulu, HI Received a MATESL degree in 1971
September 1963 to May 1967	Attended St. Ambrose College, Davenport, IA Received a B.A. in Philosophy in 1967

Workshops & Institutes

June 1976	Attended Institute for Potential Branch College Teachers. Prepared a course design for teaching branch college students language arts and study skills.

References

Barbara Olson
Gallup Midschool
1001 S. Grandview
Gallup, NM 87301

Priscilla Schulte
Adult Learning Center
University of New Mexico
400 W. Princeton
Gallup, NM 87301

Tom Cummings
2535 Duranes NW
Albuquerque, NM 87104

Ken Wilson
Child Hall
Harvard University
Cambridge, Mass

RESUME

Personal

Name	:	Kenneth A. Wilson
Address	:	General Delivery Ramah, NM 87321
		Phone: 505-783-5643 Work : 505-783-5061
Birthplace	:	Somerset, PA
Birthdate	:	May 5, 1951
Health	:	Excellent
Marital Status	:	Single
Places Lived	:	Somerset, PA 14 years Irwin, PA 4 years East Lansing, MI 4½ years Yellow Springs, OH 1 year Ramah, NM 3 years
Interests	:	Backpacking, cooking, literature, jazz, social history, tennis, writing.
anguages Spoken	:	Read, write, and speak German. Elementary Navajo Some Spanish

work Experience In Education

August 1975 to Present : Ramah Navajo School Board, Inc.
Pine Hill High School
Ramah, NM 87321

Duties have included the following:

August 1975-June 1976--Classroom Instructor for grades 7,8,9. Assigned 5 periods per day to teaching team which was to implement "Core" program, an integrated approach to social studies and language arts for Navajo ESL speakers. Conceptual processes common to the two areas were to be emphasized. Most of this first year was spent working out effective team teaching strategies with colleagues Verma Yazzie and Bernie Legner.
Also taught 8th grade life science one period per day.

June-July 1975--Worked mornings as biology tutor for senior students who failed biology during

regular school year. Taught the standard elements of biology, but also used summer weather to involve students in examining local ecology.

Worked afternoons with co-teacher Bernie Legner to write rough draft of "Core" curriculum. Curriculum included rationale, description of student population, needs analysis, definition of skills by grade level, terminal performance objectives for semester and year. Also began outlining concept clusters to be emphasized at each grade level.

August 1976-June 1977--Classroom instructor four periods per day in team-taught 7-9 Core program described above. Emphasis this year was on developing basic skills and conceptual processes in reading/writing/speaking/listening for Navajo ESL speakers, and on providing a structured classroom environment for this to occur in.

Also taught 7th grade earth science and 8th grade life science one period each per day.

January and February of this year were spent taking over senior high biology, chemistry, physics and general science courses for regular teacher on maternity leave.

Summer, 1977--Worked on own time in preparation for implementing more skills-based, activity-oriented 7th-8th grade science program.

August 1977--Participated in curriculum workshop at Pine Hill, working to develop skills and concepts taxonomy, as well as learner outcome goals, for K-12 science and social studies.

September 1977-present--Continue to teach one period per day in Core program described above (7th grade level).
Main efforts this year have been to implement process/activity/skills based 7th-8th grade science program. Procured "The Natural World" (formerly ISCS) which is such a program and have worked to adapt it to Navajo ESL speakers. Developed supplementary lessons and activities in basic science competencies such as measuring, estimating, manipulating decimal numbers, defining operationally, relating causes/effects.

Also teach one period per day 9th grade general science.

Currently working with colleague Bernie Legner to write detailed article describing development,

goals, and content of Core 7-9 social studies/ language arts program (see above).

ther Work Experience

Worked summers throughout college as production line worker (windshield manufacture) for PPG Industries, Works #25, Greensburg, PA. (A total of 9 months on the line.) Familiar with many industrial processes and warehousing equipment.

Also worked one summer as receiving clerk for same factory. Familiar with shipping/receiving/ clerical procedures.

During college years also held jobs as life-guard (Lansing, MI YMCA), dishwasher and busboy.

During the period between undergraduate and graduate school school (early 1974) worked as taxi driver, janitor, and truck driver in Lansing, Michigan. Janitored and drove truck for Lansing Die Sinking Co., delivering industrial dies to forging and maching plants. Greatly increased knowledge of industrial processes and conditions.
Drove taxi for Lansing Cab Co., aquiring intimate knowledge of urban life which has proved invaluable in social studies teaching.

Education

977-78 — Navajo 101 and 102 under Alan Wilson at University of New Mexico, Gallup Branch, Gallup, NM.

August 1974-September 1975 — Enrolled in Master of Arts in Teaching program at Antioch Graduate School of Education, Yellow Springs Center, Yellow Springs, OH. Program emphasized competency based, "inquiry" education.

Received M.A.T.

September 1969-March 1974 — Enrolled as undergraduate at Michigan State University, East Lansing, MI. Jointly in MSU's Justin Morrill College (liberal arts) and Honors College (admitting students with superior academic qualifications). Field of concentration in anthropology/biology; cognate in economics.

Received B.A.

Certificates and Honors	New Mexico Secondary Teaching Certificate (Standard I) #065133. Authorized to teach social science, anthropology, biology, general science.
	Red Cross First Aid and Senior Life Saving
	Graduate "with honor" of Michigan State University's Honors College
	National Merit Scholar, 1969
References	Bernie Legner, Co-teacher Box 196 Ramah, NM 87321
	Tom Cummings, Curriculum Development Specialist Native American Materials Development Center 407 Rio Grande Blvd., N.W. Albuquerque, NM 87104
	Kathleen Densmore Job Corps Teacher Evaluator Center For Teaching and Learning 713 N. 25th St. Grand Forks, ND 58201
	William Rada, Principal Albuquerque Indian School P.O. Box 6507 Albuquerque, NM 87107

APPENDIX VII

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Scheduled laboratory technical presentations from 8 am-12 noon for the following dates - July 15, 17, 22, 29, 31. The 35 students will be divided into five groups of seven students.

Scheduled personnel office presentation from 8 am-12 noon on July 24. All 35 students will participate as one group.

	July 15	July 17	July 22	July 29	July 31
1. Space/Solar Research	Group 1	Group 2	Group 3	Group 4	Group 5
2. Global Climate Research	Group 2	Group 3	Group 4	Group 5	Group 1
3. Remote Sensing Research	Group 3	Group 4	Group 5	Group 1	Group 2
4. Storm and Flood Disaster Research	Group 4	Group 5	Group 1	Group ?	Group 3
5. Air and Water Pollution Research	Group 5	Group 1	Group 2	Group 3	Group 4

APPENDIX VIII

LIST OF GUEST SPEAKERS

GUEST SPEAKERS--FIPSE 1980

Don Ahshapanek (Delaware), Professor, Haskell Junior College.

Andy Anderson (Cayuger Mohawk-Tuscarova), Chemistry.

Eddie Box, Traditional Religious Leader, Ute Indian Tribe.

Dr. Fletcher, Director, NOAA.

Carol Gardipe (Penobseot), Marine Geologist, NOAA.

Dr. Hess, Director, NCAR.

Charlie Hill (Oneida), Comedian.

Jack Hodges, Mathematics Instructor, University of Colorado.

Steve Manydeeds (Hunkpapa Sioux), Geophysicist, USGS.

Joe Martin (Navajo), Doctoral Candidate.

Sister Mary Ellen Murphy, Consultant to NASA.

Michael Taylor (Oglala), Educational Opportunity Center of Denver.

Robert K. Whitman (Navajo), Engineer, IBM.

APPENDIX IX

STATISTICAL SUMMARIES

EVALUATION I

- SCALE +					
1	2	3	4	5	I. PRE-Planning
0	0	6	16	12	1. Receiving a handbook of information about the program requirements.
0	2	13	9	12	2. Signing an "informed consent" form.
2	3	5	10	16	3. Having your parents sign an informed consent permission form.
0	2	4	8	22	4. Receiving newsletters about the progress of the program.
4	4	13	9	4	5. Completing the questionnaire.
5	7	9	8	3	6. Writing your autobiography.
2	4	7	14	10	7. Writing to another member of the group.
2	2	5	11	11	8. Submitting travel plans before your arrival.
					II. ARRIVAL & ORIENTATION
7	0	5	5	12	1. Being met at the airport or bus depot by staff member.
0	2	6	12	14	2. Welcome at the dorm by staff.
9	4	8	11	2	3. Having your picture taken.
0	13	13	4	6	4. Having a short orientation meeting the first night.
					III. MONDAY MORNING ORIENTATION & TESTING
2	3	6	17	17	1. "Inspiration" talk by Norbert.
0	0	4	16	11	2. Introduction of staff members.
6	2	6	9	19	3. Introduction of fellow classmates.
0	4	16	11	4	4. Handbook review and contracts.
3	6	7	13	6	5. Testing session.
2	1	3	15	13	6. Campus tour.
6	3	7	11	6	7. Scavenger hunt on campus.

Rated on a scale of 1 (worst) to 5 (best).

EVALUATION OF RETREAT

- SCALE +					
1	2	3	4	5	ACCOMMODATIONS
0	0	2	11	26	General location of the camp
0	2	2	11	18	Food
2	5	15	12	5	Sleeping quarters
0	14	13	7	5	Shower facilities
					ACTIVITIES
1	1	10	14	11	Concentric circle
3	1	9	12	13	Scavenger hung
3	1	9	12	13	Naming your group
0	3	4	10	21	Painting the group mural
0	3	12	15	10	Helping with the cooking and clean-up
1	1	7	6	28	Volleyball
0	0	0	10	24	Blind walk
1	1	9	6	22	Private thinking time
1	10	6	8	14	Circle sharing on Sunday morning
0	1	7	5	15	Art seminar
0	3	5	0	28	"Palm reading"
0	2	2	5	7	Writing seminar
0	0	2	3	2	Mapping
0	3	7	6	4	Creative drama
0	0	2	5	15	Photography
0	0	2	5	32	Field botany seminar
					VISITORS
0	0	0	5	30	Botany
0	0	3	13	19	Engineer
0	2	3	10	20	Story Teller
0	0	0	7	28	Drum Group
2	0	1	2	30	Singer
					OUTCOMES
0	0	3	15	21	Idea of building into a close-knit functioning group is valuable
0	0	1	15	23	Idea of getting in touch with myself is valuable
0	0	1	11	26	Idea of committing what I am willing to give to the group is valuable.
0	0	4	13	22	Idea of sharing my feelings in the Sunday morning group is valuable.

- SCALE +					
1	2	3	4	5	MOUNTAIN BELL
0	1	7	4	24	Material covered was interesting and informative
0	0	5	9	22	Material was presented in a manner easy to understand
0	0	0	5	30	Presenter's manner was friendly & willing to answer questions.
0	0	3	14	20	Questions were answered satisfactorily.
0	0	6	9	16	Handouts were related to materials covered.
					Length of presentation was:
				3	Too long
				7	Too short
				27	Just right
				34	This field trip should be taken again

NOAA EVALUATION

The purpose of visiting the NOAA laboratories this summer was to have you, the student, be in contact with working scientists so you could become familiar with the kind of work scientists do. We also wanted you to acquire some basic scientific concepts in various scientific areas--physics, chemistry, meteorology, etc. In light of these two objectives, please rate on a scale of 1-5 the following statements as they apply to you.

% of student answers					
1	2	3	4	5	
0	0	9	44	47	I learned from listening and observing some of the kinds of activities scientists perform in their work.
0	3	12	26	59	I learned new scientific information from visiting the NOAA labs.
0	3	20	53	23	I learned the various steps scientists go through in arriving at new discoveries (e.g., collecting data, classifying and quantifying data, determining relationships, etc.).

GENERAL EVALUATION

% of student answers					
1	2	3	4	5	LIVING ACCOMMODATIONS
0	0	3	39	58	Dorm room
13	13	26	42	6	Food
3	10	22	32	32	Laundry facilities
0	0	3	16	81	Recreation center facilities
0	5	10	16	69	Library facilities
0	3	31	31	35	Classroom facilities
10	13	22	44	10	Transportation facilities
19	0	3	13	10	Other (listed various items)
					INSTRUCTIONAL PROGRAM
0	10	35	48	6	Methods of instruction used by Teacher B
0	0	16	48	32	Methods of instruction used by Teacher A
13	6	22	39	16	Methods of instruction used by career education
0	0	39	39	19	Materials used by teachers
13	10	35	22	16	Amount of time given to instruction daily
					COUNSELING PROGRAM
3	0	19	39	35	Adequate career counseling information
6	0	10	29	52	Adequate personal counselors to talk to if you wanted
					STAFF
0	4	6	45	45	Dorm Counselor A
3	4	10	35	48	Instructor A
4	3	16	32	45	Dorm Counselor B
7	6	19	39	29	Instructor B
10	6	29	45	10	Dorm Counselor C
8	23	23	28	18	Peer Counselor A
6	13	23	30	28	Peer Counselor B
16	3	10	45	26	Coordinator
3	0	10	26	61	Director

EVALUATION OF FIELD TRIPS

- SCALE +					
	1	2	3	4	5
ART MUSEUM					
Material covered was interesting and informative.	1	4	6	13	14
Material was presented in a manner easy to understand.	1	3	4	12	16
Presenter's manner was friendly & willing to answer questions.	2	1	6	13	14
Questions were answered satisfactorily.	1	3	11	13	7
Handouts were related to materials covered.	2	2	4	5	4
Length of presentation was:					
Too long					14
Too short					3
Just right					18
This field trip should be taken again.					33
MUSEUM OF NATURAL HISTORY					
Material covered was interesting and informative.	0	1	5	8	21
Material was presented in a manner easy to understand.	0	1	4	8	24
Presenter's manner was friendly & willing to answer questions.	1	0	3	6	21
Questions were answered satisfactorily.	0	2	6	7	15
Handouts were related to materials covered.	0	2	6	3	2
Length of presentation was:					
Too long					7
Too short					7
Just right					17
This field trip should be taken again.					31
EARTHQUAKE RESEARCH LAB					
Material covered was interesting and informative.	0	4	8	12	8
Material was presented in a manner easy to understand.	0	4	4	12	12
Presenter's manner was friendly & willing to answer questions.	0	0	2	9	20
Questions were answered satisfactorily.	0	3	5	12	9
Handouts were related to materials covered.	0	2	4	12	12
Too long.					3
Too short					10
Just Right					19
This field trip should be taken again.					30

MOUNTAIN RESEARCH STATION EVALUATION

-		SCALE		+	
1	2	3	4	5	ACCOMMODATIONS
0	1	6	11	16	Transportation
1	11	15	5	6	Sleeping quarters
21	9	2	1	0	Food
0	5	11	13	6	Shower facilities
0	1	3	11	22	General overall environment
					ACTIVITIES
1	1	11	13	9	Orientation meeting Thursday evening
2	5	11	11	8	Slide lectures
0	2	2	6	28	Speaker on Greenland experience
0	3	3	11	20	Speaker on mammals and seasons
6	9	7	7	9	Speaker on the environment and on Tibet
0	3	4	14	10	Classes
0	1	1	12	22	Teacher A
5	1	2	6	27	Teacher B
0	5	4	7	15	Animal Tracking
0	1	3	18	15	Hikes
0	0	1	9	18	Drums and dancing
					OUTCOMES
0	1	0	8	27	It is important to be aware of the environment and how nature functions.
0	1	2	4	30	It is important to do some activities of a research nature rather than just hear about them.
0	1	0	4	31	It is important to be involved on the site (tundra, glacier, mountain trails, forests, etc.) rather than to read or hear about these places, even if it means physical exertion and getting physically tired.
					FOR NEXT YEAR
					The four days at the Mountain Research Station were:
				11	Too short
				5	Too long
				19	About right
					The experience should be included in next year's schedule:
				36	Yes
				0	No